

Living in the Past

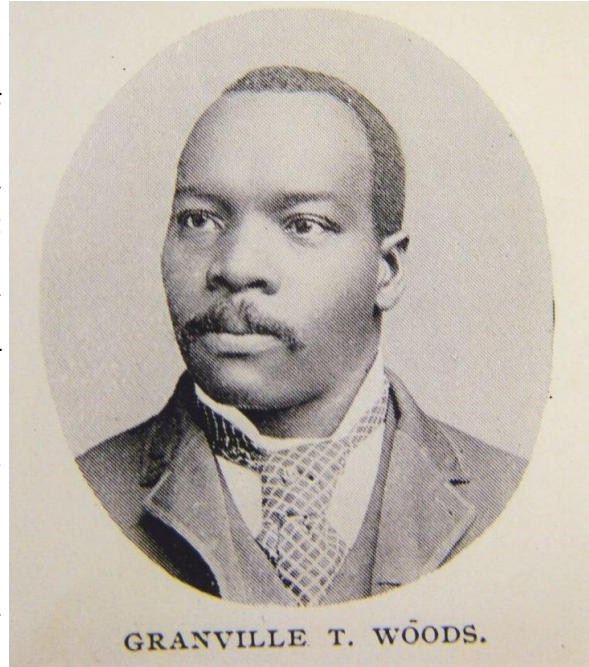
Historical perspective



Black Edison

While working aboard the steam engine *Ironsides* for the Dayton and Southwestern Railroad in 1880, [Granville Woods](#), the [son of former slaves](#), was fascinated by the communication technology afforded by the telegraph. But he observed that the communication was limited to permanent fixtures, and did not allow for messages between a moving train and a station at either end. He solved the problem with what he called the *Synchronous Multiplex Railway Telegraph*.

Later, Woods was inspired by the recent invention of the telephone, and believed there must be a faster way to send and receive messages on telegraph than by Morse code. He came up with what he termed "telephony," a type of induction telegraph that carried voice over telegraph wires, not unlike today's [induction loop detection](#) of vehicles waiting at the stop light for the light to change. While the idea proved successful, Granville eventually sold the rights of this invention to the American Bell Telephone Company so that he could focus on the Railway Telegraph device, which proved hugely beneficial in preventing rail accidents by the enhanced communication.



GRANVILLE T. WOODS.

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Growing up, Granville had little formal education, and didn't have much access to educational material at local libraries, since he was forbidden to enter them due to his skin color. He was therefore largely self-taught, but did manage to attend college for a couple of years. He became the first black mechanical engineer and first black electrical engineer in the US following the Civil War.

As a result, Woods filed more than fifty patents, for things such as an automatic brake, a theater lighting controller (forerunner to today's dimmer switch), an egg incubator, the "figure-8" roller coaster, and made patentable improvements on the electric car, the air brake, the electric streetcar, and electric train. His ideas paved the way for others to consider multiple communication modes of operation over wire and through the air. In 2006, Granville Woods was inducted into the [National Inventors Hall of Fame](#).

Funny note: some of us who are engineers today get asked what kind of trains we drive, to which we're forced to confess that we're not that kind of engineer. Granville, on the other hand was actually one of the few who professionally was both. You can read more about Granville Woods in [his short biography](#) and [on ThoughtCo](#).